How indoor farming and ‘metagenomics’ could change how we grow vegetables

Trevor Charles has three decades of experience in bacterial genetics, molecular biology and metagenomics and is CSO at Metagenom Bio Inc. Trevor is enthusiastic about the huge potential of microbiome management in hydroponic systems for enhancing health, productivity and quality of indoor farming crops.

> headshot trevorcharles metagenom square x
> Trevor Charles

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How would you explain the concept of metagenomics to a lay person?

Metagenomics (and microbiomics) tells us what microbes are doing, and how they affect something. A good example is detecting the good and bad microbes that influence the health and productivity of plants. Knowledge of this information can help to improve food production by improving efficiency, reducing plant stress and disease, and decreasing the farmer’s costs. Controlled environment systems such as vertical farms are perfect for this.

How do you envisage metagenomics being used in indoor agriculture?

We see these tools being used in two different, but interrelated ways. First, we can provide a measure of the “health” of the hydroponic system using DNA sequencing. Secondly, we can improve that health, by providing amendments, including inoculant products that we have developed specially for these hydroponic systems.

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Which crops will be most affected and how soon?

Leafy greens, tomato, cucumber and pepper are the initial emphasis. … Our goal is for our metagenome/microbiome solutions to attain a significant presence in indoor agriculture over the next three years.

Read full, original post: 5 plant genomics questions with Dr Trevor Charles of Metagenom